TITLE 326 AIR POLLUTION CONTROL BOARD

#05-197(APCB)

SUMMARY/RESPONSE TO COMMENTS FROM THE SECOND COMMENT PERIOD

IDEM requested public comment from May 1, 2006 to May 31, 2006, on the draft rule language published in the second notice, including suggestions for specific revisions to language to be contained in the draft rule. IDEM received comments from the following party by the comment period deadline:

Printing Industry of Illinois/Indiana Association (PII)

Comment: Please revise the definition of "heatset" in the draft rule language at 326 IAC 8-5-8(b)(1) by deleting "and solvents". The only solvents in heatset inks are oils. (PII)

Comment: Please revise the definition of "lithographic printing" in the draft rule language at 326 IAC 8-5-8(b)(2) by replacing it with the following:

(2) "lithographic printing is a planographic printing process where the image and nonimage areas are chemically differentiated; the image area is oil receptive and the nonimage area is water receptive. This method differs from other printing methods where the image is typically printed from a raised or recessed surface. (PII)

Comment: Please revise the definition of "offset" in the draft rule language at 326 IAC 8-5-8(b)(3) by replacing it with the following:

(3) "offset" describes a lithographic printing process that transfers the ink film from the lithographic plate to an intermediary surface (blanket), which, in turn, transfers the ink film to the substrate. (PII)

Comment: Please delete the definition of "permanent total enclosure" at IAC 8-5-8(b)(4) and the condition at IAC 8-5-8(d)(3) because U.S. EPA has determined that total enclosures are not necessary for heatset web offset lithographic presses. In its January 2005 Technical Support Document for Title V Permitting of Printing Facilities, the U.S. EPA has stated that "as long as the dryer is operated at negative pressure, the capture efficiency for VOC from the heatset lithographic inks and varnishes (coatings) formulated with low volatility ink oils can be assumed to be 100 percent of the VOC (ink oils) volatilized in the dryer." Other input materials such as alcohol substitutes in fountain solutions and low vapor pressure automatic blanket wash solvents are captured at assumed rates of 70 percent and 40 percent, respectively. The small benefit associated with the use of total enclosure does not outweigh the costs associated with operating a heatset web offset press in a total enclosure. (PII)

Comment: Please revise the BACT condition at IAC 8-5-8(c) by deleting the term "overall" and replacing "ninety eight percent (98%)" with the following conditions:

a. If the press will be controlled by an existing control system at the facility, the control system shall achieve a destruction/removal efficiency of (1) at least 90% or the currently required destruction/removal efficiency, whichever is more stringent, or (2) a total outlet concentration of 20 ppmv or less as hexane (C_6H_{14}), whichever is less stringent.

b. If the press will be controlled by a new control system at the facility, the control system shall achieve a destruction/removal efficiency of at least 95% or a total outlet concentration of 20 ppmv or less as hexane (C_6H_{14}), whichever is less stringent.

c. For presses utilizing combined dryers and control devices that do not have an inlet, the total outlet concentration should be 20 ppmv or less as hexane (C_6H_{14}), whichever is less stringent.

Deleting the term "overall" is necessary because it's elimination will ensure that the condition only applies to the destruction/removal efficiency of the control device.

A 98% destruction efficiency is too stringent of a requirement for catalytic oxidizers. While technically feasible to achieve this level of destruction at start-up, monitoring requirements will be more expensive than a 90% or 95% destruction efficiency requirement. Catalyst activity testing will likely have to be conducted on a semi-annual basis at a cost of at least $500.00 to $1,000.00 per test. The catalyst would also have to be replaced more frequently than with a 90% or 95% destruction efficiency requirement. Depending on the type and amount of catalyst, replacement cost can range from $10,000.00 to $40,000.00 per unit, which reduces the economic advantage associated with using a catalytic oxidizer. (PII)
Comment: A 98% destruction efficiency requirement would increase the cost of using regenerative oxidizers. In order to demonstrate compliance, operators will either have to install a VOC entrapment chamber at a cost of $50,000.00 to $75,000.00, or purchase a three chambered unit, which adds about 30% to the cost of a two chamber unit. Because larger units are not much more expensive than the smallest units, the cost of control per ton for low flow scenarios will be much higher than that for higher flows. Because a regenerative oxidizer must be continuously operated to be economically feasible, only a small percentage of the printing operations in the state have the necessary equipment and workload for it to be an economically viable control option. (PII)
Comment: In order to achieve a 98% destruction efficiency with a recuperative oxidizer, it may have to be operated at temperatures exceeding 1,400EF. Temperatures this high tax both the vendors and users of equipment because specialty metals must be used in the construction of the units. (PII)
Comment: The new rule should provide the ability to demonstrate compliance by measuring and verifying an outlet concentration of 20 ppmv or less as hexane (C_6H_{14}), which is consistent with U.S. EPA's TSD for Title V Permitting of Printing Facilities. (PII)
Comment: If forced to achieve a 98% destruction efficiency, printers that add new presses to existing control devices or replace existing presses would be required to either purchase a new control device, not install the new press, or retrofit the existing control device at great expense. To ease the economic burden on existing printers in this situation, 326 IAC 8-5-8(c) should be revised to read in its entirety as:

(c) The owner or operator of a heatset web offset lithographic printing press shall install, and operate at all times the facility is operating, a regenerative thermal oxidizer, recuperative thermal oxidizer, or catalytic oxidizer control device with a control efficiency of:
  i. If the press will be controlled by an existing control system at the facility, the control system shall achieve a destruction/removal efficiency of (1) at least 90% or the currently required destruction/removal efficiency, whichever is more stringent, or (2) a total outlet concentration of 20 ppmv

or less as hexane (C_6H_{14}) minus methane and ethane, whichever is less stringent.

ii. If the press will be controlled by a new control system at the facility, the control system shall achieve a destruction/removal efficiency of at least 95% or a total outlet concentration of 20 ppmv or less as hexane (C_6H_{14}) minus methane and ethane, whichever is less stringent.

iii. For presses utilizing compined dryers and control devices that do not have an inlet, the total outlet concentration should be 20 ppmv or less as hexane (C_6H_{14}) minus methane and ethane as a default compound on a dry basis. (PII)

Comment: The new rule should clarify where the temperature is to be monitored for catalytic and thermal oxidizers and should include a clarifying statement recognizing that fluctuations in oxidizer temperature can occur and that fluctuations below the set point temperature are a normal aspect of operating an oxidizer. These changes are consistent with U.S. EPA's TSD for Title V Permitting of Printing Facilities. To incorporate this change, IAC 8-5-8(d)(1) should be revised to read in its entirety as:

(1) The inlet temperature of a catalytic oxidizer or operating temperature for a thermal oxidizer to ensure that the three (3) hour average temperature, as measured by a continuous temperature monitor, is greater than or equal to the minimum temperature to achieve the required destruction efficiency established during the most recent compliance demonstration. Any three-hour period when the average temperature is equal or greater than a temperature 50EF less than the average temperature demonstrated during the most recent stack test qualifies as continuous compliance. (PII)

Comment: Due to the nature of the printing process, air flow is in continuous fluctuation and the monitoring requirement at IAC 8-5-8(d)(2) imposes additional costs at up to $5,000.00 for a monitoring system and will result in no benefit. No meaningful data would be gathered. All control devices incorporate a safety system designed to detect excessive temperatures due to high solvent levels in the dryer emissions or if the control device does not achieve the minimum operating temperature. Emissions exceeding design and permit limits cannot occur on a continuous basis and would be limited to a duration of only a few seconds for a thermal oxidizer and up to a minute for a catalytic oxidizer before the operation is automatically shut down. Finally, U.S. EPA's TSD for Title V Permitting of Printing Facilities recognizes that no monitoring of air flow is required to demonstrate compliance because of the inherent design of the press and dryer. Accordingly, IAC 8-5-8(d)(2) should be deleted. (PII)

Response: IDEM and the Printing Industry of Illinois/Indiana Association have agreed to not pursue a source specific rule in place of the 326 IAC 8-1-6 BACT requirement for heatset web offset lithographic printing press operations at this time. Those operations, where applicable, will continue to be required by 326 IAC 8-1-6 to reduce VOC emissions using BACT. IDEM will conduct further research into appropriate control standards and may propose industry specific standards for heatset web offset lithographic printing press operations in a future rulemaking.